In the Claims:

1. (Currently Amended) A semiconductor device comprising:

a functional device ~~characterized by~~ that is responsive to test stimuli; and

an integral characterization unit ~~operable~~ to control the functional device, in response to test interface inputs generated externally from the semiconductor device, to operate in response to the test stimuli for providing ~~provide~~ characterization data for the functional device.

2. (Currently Amended) A semiconductor device as claimed in claim 1, wherein the integral characterization unit ~~is operable to provide~~ provides a control signal to control an operating parameter of the functional device to generate pass/fail data in response to the test stimuli.

3. (Currently Amended) A semiconductor device as claimed in claim 2, wherein the integral characterization unit ~~is operable to provide~~ provides a control signal to control a voltage supply of the functional device.

4. (Currently Amended) A semiconductor device as claimed in claim 2, wherein the integral characterization unit ~~is operable to provide~~ provides a control signal to control a clock signal of the functional device.

5. (Currently Amended) A semiconductor device as claimed in claim 1, wherein the functional device ~~is operable to receive~~ receives the test ~~data~~ stimuli directly from an external source.

6. (Currently Amended) A semiconductor device as claimed in claim 5, wherein the functional device is ~~operable, in response~~ responsive to said test data~~, to produce~~ by producing a test response.

7. (Currently Amended) A semiconductor device as claimed in claim 5, wherein the functional device ~~is operable to receive~~ receives a control signal from said integral characterization unit.

8. (Currently Amended) A semiconductor device as claimed in claim 4, wherein the integral characterization unit ~~is operable to provide~~ provides the clock signal externally to said functional device.

9. (Currently Amended) A semiconductor device as claimed in claim 1, comprising a test interface, and wherein the integral characterization unit ~~is operable to receive~~ receives data through the test interface.

10. (Currently Amended) A semiconductor device as claimed in claim 1, further including software control means ~~operable~~ to provide control data to the integral characterization unit.

11. (Currently Amended) A semiconductor device as claimed in claim 1, further including hardware control means ~~operable~~ to provide control data to the integral characterization unit.

12. (Currently Amended) A semiconductor device claimed in claim 10, wherein the control means ~~is operable to provide~~ provides control data to the integral characterization unit through a test interface of the semiconductor device.

13. (Currently Amended) A semiconductor device as claimed in claim 5, further including built in test hardware ~~operable~~ to provide test data to the functional device in response to control inputs from the integral characterization unit.

14. (Previously presented) A semiconductor device as claimed in claim 13, wherein the built in test hardware is IEEE 1149.1 compliant.

15. (Currently Amended) A semiconductor device as claimed in claim 13, comprising a test interface and wherein the built in test hardware ~~is operable to receive~~ receives test data through a test interface of the semiconductor device.

16. (Currently Amended) A semiconductor device as claimed in claim 13, wherein the built in test hardware is ~~operable, in response~~ responsive to said test data supplied to said functional device ~~to provide~~ by providing test response data.

17. (Currently Amended) A semiconductor device as claimed in claim 16, wherein the built in test hardware ~~is operable to output~~ outputs said test response data from the functional device.

18. (Currently Amended) A semiconductor device as claimed in claim 1, further including a memory module ~~which is operable~~ to store characterization data of the functional device.

19. (Currently Amended) A semiconductor device as claimed in claim 1, further including a controller ~~which is operable~~ to provide control data to the integral characterization unit.

20. (Currently Amended) A semiconductor device comprising

a functional device, ~~having~~

an integral characterization unit, including a variable voltage controller and a variable clock signal controller, for providing characterization test data ~~for~~ to the functional device ~~and to the functional device receiving test data~~,

built-in test hardware providing functional test data to the functional device, and

a controller ~~providing control data to~~ that controls the integral characterization unit and ~~to~~ the built-in test hardware.

21. (Previously presented) A semiconductor device as claimed in claim 1, further including,

a memory module that stores characterization data of the semiconductor device,

a controller that provides control data to the integral characterization unit, wherein the controller communicates with the memory module.

22. (Currently Amended) A semiconductor device as claimed in claim 19, wherein the controller ~~is operable to receive~~ receives data over a test interface of the semiconductor device.

23. (Currently Amended) A method of characterizing a semiconductor device ~~comprising~~ including a functional device ~~characterized by~~ that is responsive to test stimuli, the method comprising

providing an integral characterization unit in the semiconductor device, and

using the integral characterization unit to control the functional device, in response to test interface inputs generated externally from the semiconductor device, to operate in response to the test stimuli by providing ~~obtaining~~ characterization data ~~from the integral characterization unit~~ including pass/fail data for the functional device.

24. (Previously presented) A method as claimed in claim 23, further comprising providing a control signal to control an operating parameter of the functional device.

25. (New) The device of claim 1, wherein the integral characterization unit includes

a variable voltage controller that is responsive to the test interface inputs by providing a variable voltage to the functional device, and

a variable clock signal controller that is responsive to the test interface inputs by providing a variable clock signal to the functional device.

26. (New) The device of claim 1, wherein the integral characterization unit consists of

a variable voltage controller that is responsive to the test interface inputs by providing a variable voltage to the functional device, and

a variable clock signal controller that is responsive to the test interface inputs by providing a variable clock signal to the functional device.

27. (New) The device of claim 1, wherein the integral characterization unit controls the functional device, in response to test interface inputs generated externally from the semiconductor device, to provide characterization data including pass/fail data selected from the group of: minimum and maximum operating voltage, minimum and maximum operating temperature, and minimum and maximum operating clock frequencies.

28. (New) The method of claim 23, wherein using the integral characterization unit to control the functional device includes

providing a variable voltage to the functional device, and

providing a variable clock signal to the functional device.

29. (New) The method of claim 23, wherein using the integral characterization unit to control the functional device consists of

providing a variable voltage to the functional device, and

providing a variable clock signal to the functional device.